

Claims

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B14

1. A hybrid inflator for an inflating type safety system of vehicles provided with an air bag, comprising an inflator housing, a gas generator installed in the inflator housing, an ignition means connected to the gas generator, wherein the interior of said inflator housing is filled with a pressurized medium, the gas generator has one or two or more gas generating chambers storing a gas generating means, and a molar ratio (A/B) between an amount (A moles) of the pressurized medium and an amount (B moles) of a gas generated due to combustion of the gas generating means is between $\frac{8}{2}$ and $\frac{1}{9}$.

2. A hybrid inflator according to claim 1, wherein the ratio A/B is set to $\frac{4}{2}$ to $\frac{0.43}{7}$.

3. A hybrid inflator according to claim 1 or 2, wherein the gas generating means is a gas generating agent including a fuel and an oxidizing agent.

4. A hybrid inflator according to claim 1 or 2, wherein the gas generating means is a gas generating agent including a fuel, an oxidizing agent and a slug-forming agent.

5. A hybrid inflator according to claim 3 or 4, wherein the fuel is guanidine derivatives.

6. A hybrid inflator according to claim 3 or 4, wherein the fuel is a non-azide organic compound except the nitramine compounds.

7. A hybrid inflator according to any one of claims 1

to 6, wherein a pressure index of the gas generating agent is less than 0.8.

ar 8. A hybrid inflator according to any one of claims 1 to 7, wherein a weight ratio (a/b) between a weight (a) of the pressurized medium and a weight (b) of the gas generating means is set to 0.1 to 7.

Sub B27 9. A hybrid inflator for an inflating-type safety system of vehicles provided with an air bag, comprising an inflator housing, a gas generator installed in the inflator housing, an ignition means connected to the gas generator, wherein the interior of said inflator housing is filled with a pressurized medium containing an inert gas and no oxygen, the gas generator has one or two or more gas generating chambers storing a gas generating means, and a molar ratio (A/B) between an amount (A moles) of the pressurized medium and an amount (B moles) of a gas generated due to combustion of the gas generating means is between 8/2 and 1/9.

10. A hybrid inflator according to claim 9, wherein the ratio A/B is set to 8/2 to 3/7.

11. A hybrid inflator according to claim 9 or 10, wherein the gas generating means is a gas generating agent including a fuel and an oxidizing agent.

12. A hybrid inflator according to claim 9 or 10, wherein the gas generating means is a gas generating agent including a fuel, an oxidizing agent and a slug-forming agent.

Sub a3 13. A hybrid inflator according to claim 11 or 12,

wherein the fuel is guanidine derivative.

a3 14. A hybrid inflator according to claim 11 or 12, wherein the fuel is a non-azide organic compound except the nitramine compounds.

15. A hybrid inflator according to any one of claims 9 to 14, wherein a pressure index of the gas generating agent is less than 0.8.

16. A hybrid inflator according to any one of claims 9 to 15, wherein a weight ratio (a/b) between a weight (a) of the pressurized medium and a weight (b) of the gas generating means is set to 0.1 to 7.

Sub B37 17. A hybrid inflator for an inflating-type safety system of vehicles provided with an air bag, comprising an inflator housing, a gas generator installed in the inflator housing, an ignition means chamber connected to the gas generator, wherein the interior of said inflator housing is filled with a pressurized medium containing an inert gas, the gas generator has one or two or more gas generating chambers including a gas generating means, said pressurized medium does not contain an oxygen, and said gas generating means is a gas generating agent including a fuel and an oxidizing agent.

18. A hybrid inflator according to claim 17, wherein the gas generating means is a gas generating agent including a fuel, an oxidizing agent and a slug-forming agent.

19. A hybrid inflator for an inflating-type safety system of vehicles provided with an air bag, comprising an

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inflator housing, a gas generator installed in the inflator housing, an ignition means chamber connected to the gas generator, wherein the interior of said inflator housing is filled with a pressurized medium containing an inert gas, the gas generator has one or two or more gas generating chambers storing a gas generating means, the pressurized medium contains no oxygen, and a pressure index of the gas generating means is less than 0.8.

Sub 24 20. A hybrid inflator according to any one of claims 1 to 19, wherein the inflator housing is made of high strength steel.

21. A hybrid inflator according to claim 20, wherein the high strength steels has a tensile strength of being not less than 60 kg/mm².

Sub 25 22. A hybrid inflator according to any one of claims 1 to 21, wherein the gas generating means is kept in a normal pressure atmosphere.

23. A hybrid inflator according to any one of claims 1 to 22, wherein the gas generating means is formed in a perforated cylindrical shape.

24. An air bag apparatus provided with an activating signal outputting means comprising an impact sensor and a control unit, and a module case in which the hybrid inflator according to any one of claims 1 to 23 and an air bag are stored.